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REC'D 29 SEP 2005

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference w4870-010	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE 2003/001123	International filing date (day/month/year) 27-06-2003	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC H04Q7/38		
Applicant TELEFONAKTIEBOLAGET LM ERICSSON (publ)		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 4 sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 10-12-2004	Date of completion of this report 19-09-2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Elisabet Åselius / itw Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/001123

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☐ the international application in the language in which it was filed
- ☐ a translation of the international application into _____
which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-14 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 15-18 received by this Authority on 31-08-2005
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1-5 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/001123

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-17</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	<u>1-17</u>	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	<u>1-17</u>	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

The claimed invention relates to a system for protecting the integrity of subscribers when positioning a mobile terminal. The subscriber is assigned an alias identity.

Documents cited in the International Search Report:

D1:WO0128273

D2:WO0199463

D3:WO0249380

D4:WO0131966

D1 discloses a system for protecting the integrity of subscribers when positioning a mobile terminal, (p.10 lines 1-10) via a location based service client, (D1:"service provider in a mobile communications network"), in relation to said location based service client. A request for an alias identity, (p.10 lines 21-29), is received from an entity initiating a positioning request for a subscriber associated with the mobile terminal to be positioned, (p.10 lines 8-10).

The alias identity is assigned for said subscriber, (p.10 lines 26-33), and stored in association with the identity of said subscriber, (p.10 lines 25-29). A positioning request including the alias identity for the subscriber is received from said location based service client, (third party "service provider in a mobile communications network"), (p.11 lines 1-9).

The subscriber number matching the alias identity for the subscriber is locked up, and the positioning request is performed, (p.11 lines 1-19; claim 11). A response including location information is received from the network and the alias identity is sent to the location based service client, (p.11 lines 20-22). .../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

D2 and D3 disclose how positioning information about mobile station in telecommunications network is provided whilst guaranteeing the integrity of subscriber, while D4 reveals how positioning data is collected and forwarded according to set specifications.

None of the cited documents reveals that alias identities are assigned to for both the requesting entity as well as to the subscriber to be positioned. In addition the claimed invention only uses nodes already present in a mobile communications system. Consequently, the invention defined in claims 1-17 fulfils the requirements of novelty, inventive step and industrial applicability.

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CLAIMS

1. A system for protecting the integrity of subscribers when positioning a mobile terminal (2b) via a location based service client (5), in relation to said
5 location based service client (5), in a communications system, **characterised** by

a gateway mobile location centre (4) adapted to:
receive a request for an alias identity from an entity (1a) initiating a positioning request for a
10 subscriber (2a) associated with said mobile terminal (2b) to be positioned,

assign an alias identity for said entity (1a) and/or
for said subscriber (2a),

store said alias identity for said entity (1a) and/or
15 said subscriber (2a) in association with an identity of said entity (1a) and said subscriber (2a), respectively,

receive a positioning request from said location based service client (5) for said subscriber (2a), said request including said alias identity for said subscriber
20 (2a),

look up the subscriber number matching said alias identity for said subscriber (2a),

perform a positioning request for said mobile terminal (2b) in an associated network (3), and

25 send a response including location information received from said network (3) and said alias identity to said location based service client (5).

2. A system according to claim 1, **characterised** by a service control point (6) adapted to:

30 receive a request for an alias identity for said entity (1a) and/or said subscriber (2a) from a mobile switching centre (7),

forward said request for an alias identity to said gateway mobile location centre (4) to retrieve said alias
35 identity for said entity (1a) and said subscriber (2a), and

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send a response including said alias identity for said entity (1a) and said subscriber (2a) to said mobile switching centre (7).

3. A system according to claim 2, **characterised** in that said mobile switching centre (7) is adapted to forward the positioning request from said entity (1a) with said alias identity for said entity (1a) and said subscriber (2a) to said location based service client (5).

4. A system according to claim 3, **characterised** in that said positioning request from said entity (1a) is an SMS message and that said mobile switching centre (7) is adapted to forward said positioning request from said entity (1a) to said location based service client (5) via an SMS-Centre (9).

5. A system according to claim 3, **characterised** in that said positioning request from said entity (1a) is a voice call and that said mobile switching centre (7) is adapted to forward said positioning request from said entity (1a) to said location based service client (5) via a call centre or IVR.

6. A system according to any of the preceding claims, **characterised** in that said entity is a subscriber.

7. A system according to any of the preceding claims, **characterised** in that said alias identity is a E.164 number.

8. A method for protecting the integrity of subscribers when positioning a mobile terminal (2b) via a location based service client (5), in relation to said location based service client (5), in a communications system, **characterised** by the steps of:

assigning an alias identity for an entity (1a)
initiating a positioning request ~~and/or~~ for a subscriber (2a) associated with said mobile terminal (2b) to be positioned,

storing said alias identity for said entity (1a)

AMENDED SHEET

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and/or for said subscriber (2a) in association with the subscriber number of said entity (1a) and said subscriber (2a), respectively,

receiving a positioning request from said location based service client (5) for said subscriber (2a), said request including said alias identity for said subscriber (2a),

looking up the number matching said alias identity for said subscriber (2a),

performing a positioning request for said mobile terminal (2b) in an associated network (3), and

sending a response including location information received from said network (3) and said alias identity to said location based service client (5).

9. A method according to claim 8, **characterised** by the steps of:

at a service control point (6), receiving a request for an alias identity for said entity (1a) and said subscriber (2a) from a mobile switching centre (7),

forwarding said request for an alias identity to said gateway mobile location centre (4) to retrieve said alias identity for said entity and said subscriber (2a), and

sending a response including said alias identity for said entity (1a) and said subscriber (2a) to said mobile switching centre (7).

10. A method according to claim 9, **characterised** by the step of:

from said mobile switching centre (7), forwarding the positioning request from said entity (1a) with said alias identity for said entity and said subscriber (2a) to said location based service client (5).

11. A method according to claim 10, **characterised** in that said positioning request from said entity (1a) is an SMS message and that said positioning request from said entity (1a) is forwarded to said location based service

client (5) via a an SMS-Centre (9).

12. A method according to claim 10, **characterised** in that said positioning request from said entity (1a) is a voice call and that said positioning request from said
5 entity (1a) is forwarded to said location based service client (5) via a call centre or IVR.

13. A method according to any of the claims 8-12, **characterised** in that said entity is a subscriber.

14. A method according to any of the claims 8-12, **characterised** in that said alias identity is a E.164
10 number.

15. A computer program comprising program instructions for causing a computer to perform the method of any of the claims 8-14.

16. A computer program on a carrier and comprising computer executable instructions for causing a computer to perform the method according to claims 8-14.

17. A computer program according to claim 16, wherein said carrier is a record medium, computer memory, read-only
20 memory or an electrical carrier signal.